

AMENDMENTS

Please amend the application as indicated hereafter.

In the Specification

Please amend page 1, line 1 of the specification as follows:

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. Patent Application No. 09/796,299, filed on February 27, 2001, the entire disclosure of which is incorporated into this application by reference.

In the Claims

Please cancel claims 22-25 without prejudice, waiver or disclaimer.

Please amend the following claims as indicated.

1 1. (Previously presented) A heterojunction bipolar transistor (HBT), comprising:
2 a collector;
3 an emitter; and
4 a base located between the collector and the emitter, the base including a layer of
5 gallium arsenide antimonide (GaAsSb) less than 49 nanometers (nm) thick and having a
6 doping concentration greater than 6×10^{19} acceptors/cm³.

1 2. (Original) The HBT of claim 1, wherein the gallium arsenide antimonide of
2 the base has an arsenic (As) fraction in a range from about 50% to about 51%.

1 3. (Original) The HBT of claim 1, wherein the gallium arsenide antimonide of

2 the base has an arsenic (As) fraction in a range from about 50% to about 65%.

1 4. (Original) The HBT of claim 1, wherein the gallium arsenide antimonide of
2 the base has an arsenic (As) fraction in a range from about 50% to about 60%.

1 5. (Original) The HBT of claim 1, wherein the gallium arsenide antimonide of
2 the base has an arsenic (As) fraction in a range from about 54% to about 56%.

1 6. (Original) The HBT of claim 1, wherein the gallium arsenide antimonide of
2 the base has an arsenic (As) fraction of approximately 55%.

1 7. (Original) The HBT of claim 1, wherein the base layer of GaAsSb is less than
2 20 nm thick.

1 8. (Original) The HBT of claim 1, wherein the base layer of GaAsSb is strained
2 so that its lattice constant conforms to the lattice constant of the collector and the emitter.

1 9. (Original) The HBT of claim 1, wherein the base layer of GaAsSb is doped
2 with beryllium (Be) at a doping concentration of between approximately 6×10^{19} and
3 4×10^{20} acceptors/cm³.

1 10. (Original) The HBT of claim 1, wherein the base layer of GaAsSb is doped
2 with carbon (C) at a doping concentration of between approximately 6×10^{19} and 4×10^{20}
3 acceptors/cm³.

11. (Original) The HBT of claim 7, wherein the base layer of GaAsSb is doped with carbon (C) at a doping concentration of between approximately 6×10^{19} and 4×10^{20} acceptors/cm³.

12. (Previously presented) A method for making a heterojunction bipolar transistor (HBT), the method comprising the steps of:
forming a collector;
forming an emitter; and
forming a base located between the collector and the emitter, the base including a layer of gallium arsenide antimonide (GaAsSb) less than 49 nanometers (nm) thick and having a doping concentration greater than 6×10^{19} acceptors/cm³.

13. (Original) The method of claim 12, wherein the base is formed of gallium arsenide antimonide having an arsenic (As) fraction in a range from about 50% to about 51%.

14. (Original) The method of claim 12, wherein the base is formed of gallium arsenide antimonide having an arsenic (As) fraction in a range from about 50% to about 65%.

15. (Original) The method of claim 12, wherein the base is formed gallium arsenide antimonide having an arsenic (As) fraction in a range from about 50% to about 60%.

16. (Original) The method of claim 12, wherein the base is formed of gallium arsenide antimonide having an arsenic (As) fraction in a range from about 54% to about 56%.

1 17. (Original) The method of claim 12, wherein the base is formed of gallium
2 arsenide antimonide having an arsenic (As) fraction of approximately 55%.

1 18. (Original) The method of claim 12, wherein the base layer of GaAsSb is less
2 than 20 nm thick.

1 19. (Original) The method of claim 12, further comprising the step of straining
2 the base layer of GaAsSb so that its lattice constant conforms to the lattice constant of the
3 collector and the emitter.

1 20. (Original) The method of claim 12, further comprising the step of doping the
2 base layer of GaAsSb with beryllium (Be) at a doping concentration of between
3 approximately 6×10^{19} and 4×10^{20} acceptors/cm³.

1 21. (Original) The method of claim 12, further comprising the step of doping the
2 base layer of GaAsSb with carbon (C) at a doping concentration of between approximately
3 6×10^{19} and 4×10^{20} acceptors/cm³.

1 22. (Canceled)

1 23. (Canceled)

1 24. (Canceled)

1 25. (Canceled)